Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L4	7649	heterologous adj sequence	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:53
L5	83	L4 and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:53
L6	12	L5 and preproglu\$	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:55
L7	229	preproglu\$	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:55
L8	53	l7 and @py<"2001"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:56
L9	39	I7 and @py<"2000"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 07:56
L10	18	I7 and @py<"1998"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 08:55
L11	6	"6110707" and linker	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 08:55
L12	10	"6110707"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 08:56
L13	3140	"6110707" glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 08:56
L14	3	"6110707" and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 08:59
L15	2	114 and fusion adj protein	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:14
L16	0	connolley adj s	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:14
L17	0	connolley and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:14
L18	0	connelley and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:15

L19	12	connelly and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:19
L20	6	l19 and fusion adj protein	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:21
L21	2	"6723530"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 09:21
L22	1	I21 and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:10
L23	326	prepro\$ and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:11
L24	37	123 and @py<"2000"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:11
L25	10	124 and heterologous	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:14
L26	599	glp and fusion adj protein	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:15
L27	40	l26 and @py<"2000"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:15
L28	13	126 and @py<"1998"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:20
L29	72	126 and @py>"1998" and @py<"2002"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 10:21
L30	15	126 and @py>"1998" and @py<"2000"	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:16
L31	18	wadsworth adj samuel	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:16
L32	20	armentano adj donna	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:16
L33	120	gregory adj richard	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:17
L34	3	parsons adj geoffrey	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:17

L35	137	131 or 132 or 133 or 134	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:17	
L36	3	I35 and glp	US-PGPUB; USPAT; DERWENT	OR	ON	2006/01/27 11:18	

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:27:35; Search time 229 Seconds

(without alignments)

240.311 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0, Gapext 0.5

Searched: 2166443 seqs, 705528306 residues

Total number of hits satisfying chosen parameters: 2166443

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

ક

Maximum Match 100%

Listing first 45 summaries

Database :

UniProt_05.80:*

1: uniprot_sprot:*
2: uniprot trembl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result No.	Score	Query Match	Length	DB	ID	Description
1	324	80.6	87	1	EXE4 HELSU	P26349 heloderma
2	314	78.1	87	2	Q7SZU6 HELHR	Q7szu6 heloderma ł
3	168.5	41.9	176	1	GLUC SHEEP	Q8mj25 o glucagon
4	168.5	41.9	180	1	GLUC BOVIN	P01272 b glucagon
5	168.5	41.9	180	1	GLUC CANFA	P29794 c glucagon
6	168.5	41.9	180	1	GLUC_PIG	P01274 s glucagon
7	167.5	41.7	180	1	GLUC_CAVPO	P05110 c glucagon
8	167.5	41.7	180	1	GLUC HUMAN	P01275 h glucagon
9	167.5	41.7	180	1	GLUC_MESAU	P01273 m glucagon
10	167.5	41.7	180	1	GLUC_MOUSE	P55095 m glucagon
11	167.5	41.7	180	1	GLUC_RAT	P06883 r glucagon
12	167.5	41.7	180	2	Q53TP6 HUMAN	Q53tp6 homo sapiem
13	167	41.5	180	1	GLUC_OCTDE	P22890 o glucagon
14	166.5	41.4	45	2	Q6PPF4_CAPHI	Q6ppf4 capra hirc
15	164.5	40.9	206	1	GLUC_CHICK	P68259 g glucagon

154.5	38.4	124	2	Q6RYB1_9SAUR	Q6ryb1	agkistrodon
153.5	38.2	120	2	Q6RYB7_ICTPU		ictalurus p
151.5	37.7	204	1	GLUC_HELSU	012956	h glucagon
149	37.1	145	2	Q6RYB5_NEOFS	Q6ryb5	neoceratodu
148	36.8	153	2	Q6RYB6 PRODO	Q6ryb6	protopterus
146.5	36.4	122	1	GLUC2_LOPAM	P04092	lophius ame
144	35.8	80	2	Q6IUP8_PHOSU	Q6iup8	phodopus su
140	34.8	123	2	Q6RYA9_9PERC	Q6rya9	sebastes ca
139	34.6	860	2	Q4RQJ4_TETNG	Q4rqj4	tetraodon n
138	34.3	220	2	Q8UWL9_9NEOB	Q8uwl9	hoplobatrac
134	33.3	149	2	Q6RYB2_BUFMA	Q6ryb2	bufo marinu
130	32.3	266	1	GLUC1_XENLA	042143	xenopus lae
130	32.3	266	2	Q6DIZ4_XENTR	Q6diz4	xenopus tro
128	31.8	121	2	Q5PR39_BRARE	Q5pr39	brachydanio
127	31.6	103	1	GLUC_RANCA	P15438	rana catesb
125	31.1	121	2			sebastes ca
125	31.1	176	2			sebastes ca
125	31.1	219	1		042144	xenopus lae
125	31.1	219	2		Q5d082	xenopus lae
124	30.8	66	2		Q788w6	oncorhynchu
124	30.8	72	2			oncorhynchu
124	30.8		2	_	Q6ryb8	ictalurus p
124			2			ictalurus p
124	30.8	178	1			oncorhynchu
122.5	30.5	176	2			sebastes ca
122	30.3	30	1			anguilla an
		30	1	-		anguilla ro
120	29.9	121	1			carassius a
120	29.9	124	2		-	tetraodon n
119	29.6	160	1	GLUC1_PETMA	Q9pur1	petromyzon
	153.5 151.5 149 148 146.5 144 140 139 138 134 130 128 127 125 125 125 125 125 125 124 124 124 124 124 124 122 120 120	153.5 38.2 151.5 37.7 149 37.1 148 36.8 146.5 36.4 144 35.8 140 34.8 139 34.6 138 34.3 130 32.3 130 32.3 128 31.8 127 31.6 125 31.1 125 31.1 127 30.8 124 30.8 124 30.8 124 30.8 124 30.8 124 30.8 125 30.5 120 30.3 120 29.9 120 29.9	153.5 38.2 120 151.5 37.7 204 149 37.1 145 148 36.8 153 146.5 36.4 122 144 35.8 80 140 34.8 123 139 34.6 860 138 34.3 220 134 33.3 149 130 32.3 266 128 31.8 121 127 31.6 103 125 31.1 121 125 31.1 176 125 31.1 219 124 30.8 66 124 30.8 72 124 30.8 173 124 30.8 178 122.5 30.5 176 122 30.3 30 122 30.3 30 120 29.9 121 120 29.9 124	153.5 38.2 120 2 151.5 37.7 204 1 149 37.1 145 2 148 36.8 153 2 146.5 36.4 122 1 144 35.8 80 2 140 34.8 123 2 139 34.6 860 2 138 34.3 220 2 134 33.3 149 2 130 32.3 266 1 130 32.3 266 2 128 31.8 121 2 127 31.6 103 1 125 31.1 121 2 125 31.1 176 2 125 31.1 219 1 125 31.1 219 2 124 30.8 72 2 124 30.8 72 2 124 30.8 173 2 124 30.8 178 1 122.5 30.5 176 2 122 30.3 30 1 122 30.3 30 1	153.5 38.2 120 2 Q6RYB7_ICTPU 151.5 37.7 204 1 GLUC_HELSU 149 37.1 145 2 Q6RYB5_NEOFS 148 36.8 153 2 Q6RYB6_PRODO 146.5 36.4 122 1 GLUC2_LOPAM 144 35.8 80 2 Q6IUP8_PHOSU 140 34.8 123 2 Q6RYA9_9PERC 139 34.6 860 2 Q4RQJ4_TETNG 138 34.3 220 2 Q8UWL9_9NEOB 134 33.3 149 2 Q6RYB2_BUFMA 130 32.3 266 1 GLUC1_XENLA 130 32.3 266 1 GLUC1_XENLA 130 32.3 266 2 Q6DIZ4_XENTR 128 31.8 121 2 Q5PR39_BRARE 127 31.6 103 1 GLUC_RANCA 125 31.1 121 2 Q6RYC1_9PERC 125 31.1 121 2 Q6RYC1_9PERC 125 31.1 176 2 Q6RYC2_9PERC 125 31.1 219 1 GLUC2_XENLA 124 30.8 66 2 Q788W6_ONCTS 124 30.8 66 2 Q788W6_ONCTS 124 30.8 172 2 Q91409_ONCTS 124 30.8 173 2 Q6RYB9_ICTPU 124 30.8 173 2 Q6RYB0_PERC 125 30.5 176 2 Q6RYB0_PERC 122 30.3 30 1 GLUCL_ANGAN 122 30.3 30 1 GLUCL_ANGAN 122 30.3 30 1 GLUCL_ANGRO 120 29.9 121 1 GLUC_CARAU 120 29.9 121 1 GLUC_CARAU 120 29.9 121 1 GLUC_CARAU	153.5 38.2 120 2 Q6RYB7_ICTPU Q6ryb7 151.5 37.7 204 1 GLUC_HELSU 012956 149 37.1 145 2 Q6RYB5_NEOFS Q6ryb5 148 36.8 153 2 Q6RYB6_PRODO Q6ryb6 146.5 36.4 122 1 GLUC2_LOPAM P04092 144 35.8 80 2 Q6IUPB_PHOSU Q6iup8 140 34.8 123 2 Q6RYA9_9PERC Q6rya9 139 34.6 860 2 Q4RQJ4_TETNG Q4rqj4 138 34.3 220 2 Q8UWL9_9NEOB Q8uwl9 134 33.3 149 2 Q6RYB2_BUFMA Q6ryb2 130 32.3 266 1 GLUC1_XENLA 042143 130 32.3 266 2 Q6DIZ4_XENTA Q6diz4 128 31.8 121 2 Q5PR39_BRARE Q5pr39 127 31.6 103 1 GLUC_RANCA P15438 125 31.1 121 2 Q6RYC1_9PERC Q6ryc1 125 31.1 176 2 Q6RYC1_9PERC Q6ryc1 125 31.1 176 2 Q6RYC1_9PERC Q6ryc1 125 31.1 219 1 GLUC_XENLA 042144 125 31.1 219 2 Q5D082_XENLA Q42144 125 31.1 219 2 Q5D082_XENLA Q42144 125 31.1 219 2 Q5D082_XENLA Q5d082 124 30.8 66 2 Q788W6_ONCTS Q788W6 124 30.8 173 2 Q6RYB8_ICTPU Q6ryb8 124 30.8 173 2 Q6RYB8_ICTPU Q6ryb8 124 30.8 173 2 Q6RYB0_9PERC Q6ryc1 125 30.5 176 2 Q6RYB0_9PERC Q6ryb9 124 30.8 178 1 GLUCL_ANGAN P63294 122 30.3 30 1 GLUCL_ANGAN P63295 120 29.9 121 1 GLUC_CARAU P79695 120 29.9 121 1 GLUC_CARAU P79695 120 29.9 121 1 GLUC_CARAU P79695

```
EXE4 HELSU
ID EXE4 HELSU
                    STANDARD;
                                   PRT;
                                           87 AA.
     P26349;
AC
     01-MAY-1992 (Rel. 22, Created)
     15-JUL-1998 (Rel. 36, Last sequence update)
DT . 10-MAY-2005 (Rel. 47, Last annotation update)
DE
     Exendin-4 precursor.
os
     Heloderma suspectum (Gila monster).
     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC
     Lepidosauria; Squamata; Scleroglossa; Anguimorpha; Helodermatidae;
OC
OC
     Heloderma.
     NCBI_TaxID=8554;
OX
RN
     [1]
RP
     NUCLEOTIDE SEQUENCE.
     MEDLINE=97172477; PubMed=9020121; DOI=10.1074/jbc.272.7.4335;
RX
     Chen Y.E., Drucker D.J.;
RA
     "Tissue-specific expression of unique mRNAs that encode proglucagon-
RT
     derived peptides or exendin 4 in the lizard.";
RT
RL
     J. Biol. Chem. 272:4108-4115(1997).
RN
     [2]
RP
     PROTEIN SEQUENCE OF 48-86.
```

RESULT 1

```
RC
    TISSUE=Venom;
RX
    MEDLINE=92218391; PubMed=1313797;
RA
    Eng J., Kleinman W.A., Singh L., Singh G., Raufman J.-P.;
    "Isolation and characterization of exendin-4, an exendin-3 analogue,
RT
    from Heloderma suspectum venom. Further evidence for an exendin
    receptor on dispersed acini from guinea pig pancreas.";
RT
    J. Biol. Chem. 267:7402-7405(1992).
RL
RN
    [3]
RP
    STRUCTURE BY NMR OF 48-86.
    PubMed=11683627; DOI=10.1021/bi010902s;
RX
    Neidigh J.W., Fesinmeyer R.M., Prickett K.S., Andersen N.H.;
RA
    "Exendin-4 and glucagon-like-peptide-1: NMR structural comparisons in
RT
RT
    the solution and micelle-associated states.";
    Biochemistry 40:13188-13200(2001).
RL
    -!- FUNCTION: Has a VIP/secretin-like biological activity. Interacts
CC
        with the exendin receptor.
CC
    -!- SUBCELLULAR LOCATION: Secreted.
CC
    -!- TISSUE SPECIFICITY: Expressed by the venom gland.
CC
    -!- SIMILARITY: Belongs to the glucagon family.
CC
    ______
CC
    This Swiss-Prot entry is copyright. It is produced through a collaboration
CC
    between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC
    the European Bioinformatics Institute. There are no restrictions on its
CC
CC
    use as long as its content is in no way modified and this statement is not
CC
    _____
CC
DR
    EMBL; U77613; AAB51130.1; -; mRNA.
DR
    PIR; A42486; HWGH4G.
    PDB; 1JRJ; NMR; A=48-86.
DR
DR
    InterPro; IPR000532; Glucagon.
    Pfam; PF00123; Hormone 2; 1.
DR
    SMART; SM00070; GLUCA; 1.
DR
    PROSITE; PS00260; GLUCAGON; 1.
DR
    3D-structure; Amidation; Direct protein sequencing; Glucagon family;
KW
KW
    Signal; Toxin.
FT
    SIGNAL
                       23
                               Potential.
FT
    PROPEP
                24
                       47
FT
    PEPTIDE
                48
                       86
                               Exendin-4.
FT
    MOD RES
                86
                       86
                               Serine amide (G-87 provides amide group).
FT
    TURN
                52
                       53
                54
FT
    HELIX
                       74
FT
    TURN
                75
                       76
FT
    HELIX
                77
                       79
SQ
    SEQUENCE
               87 AA; 9479 MW; 656BA6E3D87454A2 CRC64;
                        80.6%; Score 324; DB 1; Length 87;
 Query Match
                        81.6%; Pred. No. 5.4e-28;
 Best Local Similarity
                            5; Mismatches 9; Indels
          62; Conservative
                                                            0; Gaps
 Matches
           1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qу
             Db
           1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFASKIKRHGEGTFTSDLSKQ 60
          61 LEGQAAKEFIAWLVKG 76
Qу
             :|:|:|||
Db
          61 MEEEAVRLFIEWLKNG 76
```

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:17:55; Search time 185 Seconds

(without alignments)

185.252 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI......SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 2443163 seqs, 439378781 residues

Total number of hits satisfying chosen parameters: 2443163

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A Geneseq 21:*

1: geneseqp1980s:*

2: geneseqp1990s:*

3: geneseqp2000s:*

4: geneseqp2001s:*

5: geneseqp2002s:*

6: geneseqp2003as:*

7: geneseqp2003bs:*

8: geneseqp2004s:*

9: geneseqp2005s:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result No.	Score	% Query Match	Length	DB	ID	Descripti 	on
1	402	100.0	78	6	ABP98121	Abp98121	Amino aci
2	402	100.0	78	9	ADZ80126	Adz80126	Exendin-4
3	364	90.5	80	6	ABP98129	Abp98129	Amino aci
4	364	90.5	80	9	ADZ80142	Adz80142	Exendin-4
5	325.5	81.0	77	6	ABP98122	Abp98122	Amino aci
6	325.5	81.0	77	9	ADZ80128	Adz80128	Helodermi
7	324	80.6	87	2	AAW70288	Aaw70288	Heloderma
8	324	80.6	87	7	ADF15336	Adf15336	Human alb

```
9
        324
              80.6
                                                            Adf15337 Human alb
                        87
                            7
                                ADF15337
                                                            Adh21405 Human ext
10
        324
               80.6
                        87
                             7
                                ADH21405
11
        324
              80.6
                        87
                             7
                                ADH21406
                                                            Adh21406 Human ext
12
        231
              57.5
                        47
                             6
                                ABU91976
                                                            Abu91976 Glia mons
13
        198
              49.3
                        64
                                                            Adl92153 Exendin-4
                            8
                                ADL92153
14
        195
               48.5
                        84
                                                            Abp98124 Amino aci
                                ABP98124
15
        195
              48.5
                        84
                                ADZ80132
                                                            Adz80132 IGF-1(fur
        192
               47.8
                                                            Abp98123 Amino aci
16
                        82
                             6
                                ABP98123
17
        192
              47.8
                        82
                             9
                                ADZ80130
                                                            Adz80130 GIP.GLP-1
18
      184.5
              45.9
                        77
                             6
                                ABP98128
                                                            Abp98128 Amino aci
19
      184.5
              45.9
                        77
                             9
                                ADZ80140
                                                            Adz80140 Factor IX
20
                       386
        178
              44.3
                             4
                                AAB30703
                                                            Aab30703 A Bacillu
21
      176.5
              43.9
                        77
                             7
                                                            Adf16689 Human alb
                                ADF16689
22
      176.5
              43.9
                        77
                             7
                                ADH21889
                                                            Adh21889 Human GLP
                             7
23
      176.5
              43.9
                       662
                                                            Adf16526 Human alb
                                ADF16526
                             7
24
      176.5
              43.9
                       662
                                ADH21814
                                                            Adh21814 Human alb
25
        176
              43.8
                       654
                             7
                                ADF16462
                                                            Adf16462 Human alb
26
        176
              43.8
                       654
                            7
                                                            Adh21777 Human alb
                                ADH21777
27
      172.5
              42.9
                        89
                            7
                                ADF16195
                                                            Adf16195 Human alb
28
      172.5
              42.9
                        89
                            7
                                ADH21652
                                                            Adh21652 Human GLP
                                                            Adf17044 Human alb
. 29
      172.5
              42.9
                       673
                             7
                                ADF17044
                                                            Adh22037 Mouse alb
      172.5
                       673
30
              42.9
                             7
                                ADH22037
      172.5
                       674
                             7
                                                            Adf16193 Human alb
31
              42.9
                                ADF16193
                       674
                            7
                                                            Adh21650 Human alb
32
      172.5
              42.9
                                ADH21650
              42.9
                             9
33
      172.5
                       674
                                ADW45202
                                                            Adw45202 K. lactis
      172.5
              42.9
                       915
                             9
                                ADW45204
                                                            Adw45204 K. lactis
34
35
        172
              42.8
                       663
                            7
                                ADF16512
                                                            Adf16512 Human alb
                                                            Adh21803 Human alb
              42.8
                       663
                             7
36
        172
                                ADH21803
37
                             7
                                                            Adf17048 Human alb
      171.5
              42.7
                        60
                                ADF17048
      171.5
                            7
                                                            Adh22038 Human GLP
38
              42.7
                        60
                                ADH22038
      171.5
                        83
                            7
                                                            Adf16687 Human alb
39 .
              42.7
                                ADF16687
                                                            Adh21887 Human GLP
      171.5
                        83
                            7
40
              42.7
                                ADH21887
41
      171.5
               42.7
                       145
                                ADF16688
                                                            Adf16688 Human alb
      171.5
               42.7
                       145
                             7
                                ADH21888
                                                            Adh21888 Human GLP
.42
                                                            Adf16510 Human alb
43
      171.5
               42.7
                       664
                             7
                                ADF16510
                             7
                                                            Adh21801 Human alb
44
      171.5
               42.7
                       664
                                ADH21801
                            7
                                                            Adf16524 Human alb
45
      171.5
               42.7
                       668
                                ADF16524
```

```
RESULT 1
ABP98121
     ABP98121 standard; protein; 78 AA.
ID
XX
AC
     ABP98121;
XX
DT
     11-AUG-2003 (first entry)
XX
DE
     Amino acid sequence of proexendin leader linked to modified GLP-1.
XX
     Glucagon-like peptide 1; GLP-1; blood sugar disorder; diabetes;
KW
     hyperglycemia; hypoglycaemia; hypoinsulinism; insulin production;
KW
KW
     proexendin.
XX
os
     Synthetic.
```

```
os
     Homo sapiens.
XX
FΗ
     Key
                    Location/Qualifiers
                    1. .47
FT
     Peptide
FT
                    /note= "proexendin leader"
XX
PN
     WO2003014318-A2.
XX
PD
     20-FEB-2003.
XX
ΡF
     07-AUG-2002; 2002WO-US025227.
XX
PR
     08-AUG-2001; 2001US-0310982P.
XX
     (GENZ ) GENZYME CORP.
PA
XX
     Wadsworth/SC, Armentano D, Gregory RJ, Parsons G;
PΙ
XX
DR
     WPI; 2003-256570/25.
     N-PSDB; ACC43465.
DR
XX
     New glucagon-like peptide 1 (GLP-1) precursor comprising a mammalian GLP-
PT
     1 linked to a heterologous signal sequence, useful for treating blood
PT
     sugar disorders, e.g. Type I and Type II diabetes, hyperglycemia, or
PT
PT
     hypoglycemia.
XX
PS
     Claim 16; Fig 2; 69pp; English.
XX
     The present sequence is a proexendin leader linked to a Gly-8 modified
CC
     human glucagon-like peptide 1 (GLP-1). The specification describes
CC
     compositions, expression vectors and host cells comprising nucleic acid
CC
     which encodes a precursor GLP-1 linked to a heterologous signal sequence.
CC
     Nucleic acids encoding GLP-1 may be used to treat blood sugar disorders
CC
     such as Type I and Type II diabetes, hyperglycemia, hypoglycaemia, and
CC
     hypoinsulinism and to promote or stimulate insulin production
CC
XX
SO
     Sequence 78 AA;
                          100.0%; Score 402; DB 6; Length 78;
  Query Match
  Best Local Similarity
                         100.0%; Pred. No. 2.4e-40;
                                                      Indels
                                                                0:
                                                                            0;
  Matches 78; Conservative
                               0; Mismatches
            1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFÄKRIKRHGEGTFTSDVSSY 60
Qу
              _1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Db
Qу
           61 LEGQAAKEFIAWLVKGRG 78
              1111111111111111111
           61 LEGQAAKEFIAWLVKGRG 78
Db
RESULT 2
ADZ80126
     ADZ80126 standard; protein; 78 AA.
XX
AC
     ADZ80126;
XX
```

..

```
DΤ
     28-JUL-2005 (first entry)
XX
DE
     Exendin-4.GLP-1Gly8 amino acid sequence SEQ ID NO:4.
XX
     glucagon-like peptide 1; fusion protein; antidiabetic; hepatotropic;
KW
     metabolic; insulin dependent diabetes; non-insulin dependent diabetes;
KW
KW
     metabolic disorder; liver disease; exendin.
XX
os
     Mammalia.
os
     Synthetic.
XX
FΗ
                     Location/Qualifiers
     Key
FT
                     1. .47
     Peptide
                     /note= "Proexendin signal peptide"
FT
FT
     Protein
                     48. .78
                     /note= "GLP-1Gly8"
FT
XX
     US2005107318-A1.
PN
XX
     19-MAY-2005.
PD
XX
     17-NOV-2003; 2003US-00715976.
PF
XX
PR
     17-NOV-2003; 2003US-00715976.
XX
PA
     (WADS/) WADSWORTH S.
     (ARME/) ARMENTANO D.
PA
     (GREG/) GREGORY R J.
PA
     (PARS/) PARSONS G.
PA
XX
     Wadsworth S, Armentano D, Gregory RJ, Parsons G;
PΙ
XX
     WPI; 2005-354819/36.
DR
     N-PSDB; ADZ80125.
DR
XX
     Treating diabetes comprises administering a nucleic acid encoding a
PΤ
     precursor Glucagon-like peptide 1 (GLP-1) comprising mammalian GLP-1
PΤ
     linked to a heterologous signal sequence.
PT
XX
PS
     Example 1; SEQ ID NO 4; 70pp; English.
XX
     The invention relates to a method which comprises administering to an
CC
     individual a nucleic acid encoding a precursor glucagon-like peptide 1
CC
     (GLP-1) comprising mammalian GLP-1 linked to a heterologous signal
CC
     sequence, where the precursor GLP-1 is cleaved in vivo or ex vivo which
CC
     results in generation of activated GLP-1 in the individual, where the
CC
     activated GLP-1 reduces plasma triglyceride levels or lipid accumulation
CC
     in an organ. Also described: (1) nucleic acids which encode GLP-1; (2)
CC
     vectors comprising the nucleic acids; and (3) host cells comprising the
CC
     nucleic acid. The method is useful for treating Type I diabetes (insulin
CC
     dependent diabetes) and Type II diabetes (non-insulin dependent
CC
     diabetes), metabolic syndrome and non-alcoholic fatty liver disease. The
CC
     present sequence represents the exendin-4.GLP-1Gly8 GLP-1 fusion protein,
CC-
     which is used in an example from the present invention.
CC
XX
SQ
     Sequence 78 AA;
```

```
100.0%; Score 402; DB 9; Length 78;
  Query Match
                         100.0%; Pred. No. 2.4e-40;
  Best Local Similarity
            78; Conservative
                               0; Mismatches
                                                  0; Indels
                                                                0; Gaps
                                                                            0;
            1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qy
              Db
            1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qу
           61 LEGQAAKEFIAWLVKGRG 78
              111111111111111111
           61 LEGQAAKEFIAWLVKGRG 78
Db
RESULT 3
ABP98129
ID
     ABP98129 standard; protein; 80 AA.
XX
AC
     ABP98129;
XX
DT
     11-AUG-2003 (first entry)
XX
     Amino acid sequence of proexendin leader linked to modified GLP-1.
DE
XX
KW
     Glucagon-like peptide 1; GLP-1; blood sugar disorder; diabetes;
     hyperglycemia; hypoglycaemia; hypoinsulinism; insulin production;
KW
KW
     proexendin.
XX
os
     Synthetic.
os
     Homo sapiens.
XX
FH
                     Location/Qualifiers
     Key
                     1. .40
FT
     Peptide
\mathbf{FT}
                     /note= "proexendin leader"
XX
     WO2003014318-A2.
PN
XX
     20-FEB-2003.
PD
XX
PF
     07-AUG-2002; 2002WO-US025227.
XX
     08-AUG-2001; 2001US-0310982P.
PR
XX
PA
     (GENZ ) GENZYME CORP.
XX
PΙ
     Wadsworth SC, Armentano D, Gregory RJ,
                                              Parsons G;
XX
DR
     WPI; 2003-256570/25.
     N-PSDB; ACC43473.
DR
XX
·PT
     New glucagon-like peptide 1 (GLP-1) precursor comprising a mammalian GLP-
PT
     1 linked to a heterologous signal sequence, useful for treating blood
PT ·
     sugar disorders, e.g. Type I and Type II diabetes, hyperglycemia, or
PT
     hypoglycemia.
XX
PS
     Claim 16; Fig 10; 69pp; English.
XX
CC
     The present sequence represents a proexendin leader linked to a Gly-8
```

OM protein - nucleic search, using frame plus p2n model Run on: January 5, 2006, 00:00:23; Search time 169 Seconds (without alignments) 820.413 Million cell updates/sec Title: US-10-716-326-4 Perfect score: 402 Sequence: 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78 Scoring table: BLOSUM62 Xgapop 10.0 , Xgapext 0.5 Ygapop 10.0 , Ygapext 0.5 Fgapop 6.0, Fgapext 7.0 Delop 6.0 , Delext 7.0 1303057 segs, 888780828 residues Searched: Total number of hits satisfying chosen parameters: 2606114 Minimum DB seq length: 0 Maximum DB seq length: 200000000 Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Command line parameters: -MODEL=frame+ p2n.model -DEV=x1h Q=/cgn2_1/USPTO_spool/US10716326/runat_03012006_143904_8663/app_query.fasta 1.26 -DB=Issued Patents NA -QFMT=fastap -SUFFIX=p2n.rni -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR SCORE=pct -THR MAX=100 -THR MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -USER=US10716326 @CGN 1 1 193 @runat 03012006 143904 8663 -NCPU=6 -ICPU=3 -NO MMAP -LARGEQUERY -NEG SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV_TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7 Database : Issued Patents NA:* 1: /cgn2 6/ptodata/1/ina/1_COMB.seq:* 2: /cgn2 6/ptodata/1/ina/5 COMB.seq:* 3: /cgn2_6/ptodata/1/ina/6A_COMB.seq: * /cgn2_6/ptodata/1/ina/6B_COMB.seq:* /cgn2 6/ptodata/1/ina/H COMB.seq:* /cgn2_6/ptodata/1/ina/PCTUS COMB.seq:* /cqn2 6/ptodata/1/ina/PP COMB.seq:* 8: /cgn2 6/ptodata/1/ina/RE COMB.seq:*

9: /cgn2 6/ptodata/1/ina/backfiles1.seq:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			용				
Res	ult		Query				
1	No.	Score	Match	Length	DB	ID	Description
	1	 324	80.6	492	- 3	US-09-019-172-1	Sequence 1, Appli
	2	167.5	41.7	895	3	US-08-784-582-55	Sequence 55, Appl
	3	167.5	41.7	955	3	US-08-784-582-57	Sequence 57, Appl
	4	167.5	41.7	955	3	US-08-784-582-60	Sequence 60, Appl
	5	167.5	41.7	1034	3	US-09-635-679E-1	Sequence 1, Appli
	6	167.5	41.7	1062	3	US-09-016-434-1212	Sequence 1212, Ap
	7	167.5	41.7	2356	3	US-08-784-582-72	Sequence 72, Appl
	8	163	40.5	144	2	US-08-835-231-17	Sequence 17, Appl
	9	163	40.5	144	3	US-09-108-661-17	Sequence 17, Appl
	10	157	39.1	528	2	US-08-835-231-7	Sequence 7, Appli
	11	157	39.1	528	2	US-08-835-231-8	Sequence 8, Appli
	12	157	39.1	528	3	US-09-108-661-7	Sequence 7, Appli
	13	157	39.1	528	3	US-09-108-661-8	Sequence 8, Appli
	14	118	29.4	78	2	US-08-829-876-22	Sequence 22, Appl
	15	118	29.4	78	3	US-09-234-874A-22	Sequence 22, Appl
	16	118	29.4	78	3	US-09-234-873A-22	Sequence 22, Appl
	17	118	29.4	78	3	US-10-076-604-22	Sequence 22, Appl
	18	102	25.4	207	2	US-08-193-863-3	Sequence 3, Appli
	19	102	25.4	207	2	US-08-377-833-3	Sequence 3, Appli
	20	102	25.4	207	2	US-08-324-502-3	Sequence 3, Appli
	21	102	25.4	207	2	US-08-083-501-3	Sequence 3, Appli
	22	102	25.4	207	2	US-08-415-939-3	Sequence 3, Appli
	23	99	24.6	110	2	US-07-741-931-8	Sequence 8, Appli
С	24	99	24.6	110	2	US-07-741-931-9	Sequence 9, Appli
	25	99	24.6	110	2	US-07-937-132A-8	Sequence 8, Appli
С	26	99	24.6	110	2	US-07-937-132A-9	Sequence 9, Appli
	27	93	23.1	138	3	US-09-614-847 - 146	Sequence 146, App
	28	89.5	22.3	255	3	US-09-280-030-51	Sequence 51, Appl
	29	89	22.1	57	2	US-08-811-028-43	Sequence 43, Appl
	30	89	22.1	87	2	US-07-741-931-1	Sequence 1, Appli
	31	89	22.1	87	2	US-07-937-132A-1	Sequence 1, Appli
	32	89	22.1	87	3	US-09-280-030-59	Sequence 59, Appl
С	33	85	21.1	73	2	US-08-829-876-24	Sequence 24, Appl
С	34	85	21.1	73	3	US-09-234-874A-24	Sequence 24, Appl
С	35	85	21.1	73	3	US-09-234-873A-24	Sequence 24, Appl
С	36	85	21.1	73	3	US-10-076-604 - 24	Sequence 24, Appl
	37	84	20.9	107	2	US-07-741-931-10	Sequence 10, Appl
	38	84	20.9	107	2	US-07-937-132A-10	Sequence 10, Appl
С	39	79	19.7	48	2	US-08-811-028-44	Sequence 44, Appl
С	40	79	19.7	107	2	US-07-741-931-11	Sequence 11, Appl
С	41	79	19.7	107	2	US-07-937-132A-11	Sequence 11, Appl
С	42	78	19.4	53	2	US-08-811-028-46	Sequence 46, Appl
	43	74.5	18.5	42954	3	US-09-949-016-17123	Sequence 17123, A
	44	74.5	18.5	42954	3	US-09-949-016-17124	Sequence 17124, A
	45	71.5	17.8	711	3	US-09-949-016-3581	Sequence 3581, Ap

OM protein - nucleic search, using frame plus p2n model January 4, 2006, 17:16:20; Search time 3647 Seconds Run on: (without alignments) 1215.736 Million cell updates/sec Title: US-10-716-326-4 Perfect score: 402 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78 Sequence: Scoring table: BLOSUM62 Xgapop 10.0 , Xgapext 0.5 Ygapop 10.0 , Ygapext 0.5 Fgapop 6.0, Fgapext 7.0 6.0 , Delext 7.0 Delop 5883141 segs, 28421725653 residues Searched: Total number of hits satisfying chosen parameters: 11766282 Minimum DB seq length: 0 Maximum DB seq length: 2000000000 Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Command line parameters: -MODEL=frame+ p2n.model -DEV=x1h Q=/cgn2 1/USPTO spool/US10716326/runat 03012006 143904 8645/app query.fasta_1.26 -DB=GenEmbl -QFMT=fastap -SUFFIX=p2n.rge -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR_SCORE=pct -THR MAX=100 -THR MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -USER=US10716326_@CGN_1_1_4939_@runat_03012006 143904 8645 -NCPU=6 -ICPU=3 -NO MMAP -LARGEQUERY -NEG SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV TIMEOUT=120 -WARN_TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7 Database : GenEmbl: * 1: gb ba:* 2: gb in:* 3: gb env:* 4: gb om:* 5: gb ov:* gb pat:* 7: gb_ph:* 8: gb pr:*

9: gb_ro:*
10: gb_sts:*

11: gb_sy:*
12: gb_un:*
13: gb_vi:*
14: gb_htg:*
15: gb_pl:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

						SUMMARIES	
			ક				
Resu	lt		Query				
N	0.	Score	Match	Length	DB	ID	Description
	1	324	80.6	465	5	HSU77613	U77613 Heloderma s
	2	324	80.6	492	6	AR526929	AR526929 Sequence
	3	314	78.1	397	5	нно580309	AJ580309 Heloderma
	4	314	78.1	471	6	AX824524	AX824524 Sequence
	5	187.5	46.6	458	6	AX824523	AX824523 Sequence
	6	172	42.8	396	6	AX147675	AX147675 Sequence
	7	171.5	42.7	1104	9	OCOGLU	M57688 Octodon deg
	8	168.5	41.9	559	4	AF529185	AF529185 Ovis arie
	9	168.5	41.9	574	4	AY242124	AY242124 Sus scrof
	10	168.5	41.9	1108	4	BOVGG	K00107 Bovine panc
	11	168.5	41.9	1123	4	AF308439	AF308439 Canis fam
	12	167.5	41.7	543	6	CS077314	CS077314 Sequence
	13	167.5	41.7	543	8	BT006813	BT006813 Homo sapi
	14	167.5	41.7	543	11	AY890068	AY890068 Synthetic
	15	167.5	41.7	543	11	AY890069	AY890069 Synthetic
	16	167.5	41.7	543	11	AY892547	AY892547 Synthetic
	17	167.5	41.7	543	11	AY892548	AY892548 Synthetic
	18	167.5	41.7	543	11	BT007507	BT007507 Synthetic
	19	167.5	41.7	668	9	MMPPROGLG	Z46845 M.musculus
	20	167.5	41.7	895	6	AR108106	AR108106 Sequence
	21	167.5	41.7	955	6	AR108107	AR108107 Sequence
	22	167.5	41.7	955	6	AR108109	AR108109 Sequence
	23	167.5	41.7	1034	6	A31421	A31421 H.sapiens m
	24	167.5	41.7	1034	6	AR634243	AR634243 Sequence
	25	167.5	41.7	1036	6	CQ729100	CQ729100 Sequence
	26	167.5	41.7	1053	9	GPIGG	D00014 Cavia porce
	27	167.5	41.7	1062	6	AR270649	AR270649 Sequence
	28	167.5	41.7	1062	8	HUMGLUC	J04040 Human gluca
	29	167.5	41.7	1102	9	BC012975	BC012975 Mus muscu
	30	167.5	41.7	1116	9	AF276754	AF276754 Mus muscu
	31	167.5	41.7	1118	9	HAMGG	J00059 Syrian hams
	32	167.5	41.7	1128	6	CS077369	CS077369 Sequence
	33	167.5	41.7	1154	8	BC005278	BC005278 Homo sapi
	34	167.5	41.7	2356	6	AR108119	AR108119 Sequence
	35	167.5	41.7	3798	6	CQ493428	CQ493428 Sequence
	36	167.5	41.7	4146	6	CQ414344	CQ414344 Sequence
	37	166.5	41.4	228	6	AX840858	AX840858 Sequence
	38	166.5	41.4	277	9	RATGLU4	K02811 Rat glucago
	39	166.5	41.4	707	4	AY588290	AY588290 Capra hir
	40	166.5	41.4	6455	8	HSGLUC	V01515 Human gene
	41	166.5	41.4	10050	8	HSGLUCG2	X03991 Human gluca
С	42	166.5	41.4	163681	8	AC007750	AC007750 Homo sapi

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:30:36; Search time 38 Seconds

(without alignments)

197.498 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283416 seqs, 96216763 residues

Total number of hits satisfying chosen parameters: 283416

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database: PIR_80:*

1: pir1:*

2: pir2:*

3: pir3:*

4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			*				
Re	sult		Query				
	No.	Score	Match	Length	DB	ID	Description
-							
	1	168.5	41.9	180	1	GCBO	glucagon precursor
	2	167.5	41.7	180	1	GCHY	glucagon precursor
	3	167.5	41.7	180	1	GCGP	glucagon precursor
	4	167.5	41.7	180	1	GCHU	glucagon precursor
	5	167.5	41.7	180	1	GCRT	glucagon precursor
	6	167.5	41.7	180	2	A57294	glucagon precursor
	7	167	41.5	180	1	GCRTDU	glucagon precursor
	8	164.5	40.9	151	1	GCCH	glucagon precursor
	9	164.5	40.9	206	2	I51301	proglucagon - chic
	10	157.5	39.2	158	1	GCPG	glucagon precursor
	11	146.5	36.4	122	1	GCAF2	glucagon 2 precurs
	12	128	31.8	101	1	GCFGB	glucagon precursor
	13	124	30.8	66	2	I51093	glucagon - chinook

14	124	30.8	178	2	I51058	glucagon I precurs
15	122	30.3	30	2	C61125	glucagon-like pept
16	122	30.3	30	2	B61125	glucagon-like pept
17	119	29.6	178	2	I51057	glucagon II precur
18	113	28.1	63	1	GCIDC	glucagon precursor
19	112	27.9	72	1	GCGXA	glucagon precursor
20	111.5	27.7	124	1	GCAF	glucagon 1 precurs
21	109	27.1	60	1	GCONC	glucagon precursor
22	107	26.6	30	2	S44473	glucagon-like pept
23	103.5	25.7	87	1	GCFIS	glucagon precursor
24	102	25.4	69	1	GCDG69	glucagon-69 - dog
25	96	23.9	29	2	S07211	glucagon - marbled
26	95	23.6	31	2	S44472	glucagon G2 - Nort
27	94	23.4	29	1	GCDF	glucagon - smaller
28	93	23.1	31	2	S44471	glucagon G1 - Nort
29	93	23.1	39	1	HWGH4G	exendin-4 - Gila m
30	92	22.9	29	1	GCEN	glucagon - elephan
31	89	22.1	29	1	GCOPV	glucagon - North A
32	89	22.1	29	2	A91740	glucagon - turkey
33	89	22.1	29	2	C39258	glucagon - common
34	89	22.1	29	2	A91742	glucagon - Arabian
35	89	22.1	29	2	A91741	glucagon – rabbit
36	87	21.6	29	1	A61583	glucagon - ostrich
37	87	21.6	29	1	GCDK	glucagon – duck
38	87	21.6	29	1	GCTTS	glucagon - slider
39	87	21.6	29	2	C60840	glucagon I - Europ
40	86	21.4	29	1	GCCB	glucagon - Chinchi
41	85	21.1	29	1	GCFLE	glucagon - Europea
42	85	21.1	29	2	A61135	glucagon - bigeye
43	84	20.9	39	1	HWGH3Z	exendin-3 - Mexica
44	82	20.4	29	2	S39018	glucagon - bowfin
45	80	19.9	144	2	S71426	glucose-dependent

```
RESULT 1
GCBO
glucagon precursor - bovine
N; Contains: glicentin-related peptide; glucagon; glucagon-like peptide 1;
glucagon-like peptide 2
C; Species: Bos primigenius taurus (cattle)
C;Date: 14-Nov-1983 #sequence_revision 14-Nov-1983 #text_change 20-Mar-1998
C; Accession: A93970; A92081; A01538
R; Lopez, L.C.; Frazier, M.L.; Su, C.J.; Kumar, A.; Saunders, G.F.
Proc. Natl. Acad. Sci. U.S.A. 80, 5485-5489, 1983
A; Title: Mammalian pancreatic preproglucagon contains three glucagon-related
peptides.
A; Reference number: A93970; MUID: 83299996; PMID: 6577439
A; Accession: A93970
A; Molecule type: mRNA
A; Residues: 1-180 <LOP>
A; Cross-references: UNIPARC: UPI00001734FF; EMBL: K00107
R; Bromer, W.W.; Boucher, M.E.; Koffenberger Jr., J.E.
J. Biol. Chem. 246, 2822-2827, 1971
```

A; Title: Amino acid sequence of bovine glucagon.

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:33:51; Search time 12 Seconds

(without alignments)

48.677 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI......SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0, Gapext 0.5

Searched: 57103 seqs, 7488799 residues

Total number of hits satisfying chosen parameters: 57103

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database: Published Applications AA New:*

1: /cgn2 6/ptodata/1/pubpaa/US08 NEW PUB.pep:*

2: /cgn2 6/ptodata/1/pubpaa/US06 NEW PUB.pep:*

3: /cgn2 6/ptodata/1/pubpaa/US07 NEW PUB.pep:*

4: /cgn2 6/ptodata/1/pubpaa/PCT NEW PUB.pep:*

5: /cgn2 6/ptodata/1/pubpaa/US09 NEW PUB.pep:*

6: /cgn2_6/ptodata/1/pubpaa/US10_NEW_PUB.pep:*

7: /cgn2_6/ptodata/1/pubpaa/US11_NEW_PUB.pep:*

8: /cgn2 6/ptodata/1/pubpaa/US60_NEW_PUB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			8				
R	esult		Query				
	No.	Score	Match	Length	DB	ID	Description
	1	- 169	42.0	70		US-10-997-061-28	Sequence 28, Appl
	2	161.5	40.2	117	6	US-10-997-061-9	Sequence 9, Appli
	3	161.5	40.2	122	6	US-10-997-061-31	Sequence 31, Appl
	4	158	39.3	277	6	US-10-997-061-11	Sequence 11, Appl
	5	157.5	39.2	119	6	US-10-997-061-13	Sequence 13, Appl
	6	157	39.1	31	6	US-10-997-061-3	Sequence 3, Appli
	7	154	38.3	31	6	US-10-997-061-7	Sequence 7, Appli
	8	151	37.6	30	6	US-10-997-061-1	Sequence 1, Appli
	9	151	37.6	31	6	US-10-997-061-4	Sequence 4, Appli

```
10
             37.6
                              US-11-112-277-9
       151
                       31 7
                                                          Sequence 9, Appli
11
       151
             37.6
                       31 7
                                                          Sequence 23, Appl
                              US-11-112-277-23
                       31 7
12
       151
             37.6
                                                          Sequence 24, Appl
                              US-11-112-277-24
                       34 6
13
       151
             37.6
                              US-10-997-061-10
                                                          Sequence 10, Appl
14
             37.6
                       34 6 US-10-997-061-12
       151
                                                          Sequence 12, Appl
15
       150
             37.3
                       31 7
                              US-11-112-277-1
                                                          Sequence 1, Appli
16
       150
             37.3
                       31 7
                              US-11-112-277-10
                                                          Sequence 10, Appl
                       30 6 US-10-997-061-5
17
       148
             36.8
                                                          Sequence 5, Appli
                       31 6
18
       148
             36.8
                              US-10-997-061-8
                                                          Sequence 8, Appli
                       30 7
30 6
                                                          Sequence 20, Appl
19
       147
             36.6
                              US-11-112-277-20
20
       146
             36.3
                              US-10-997-061-2
                                                          Sequence 2, Appli
21
       145
             36.1
                       30 7
                              US-11-112-277-11
                                                          Sequence 11, Appl
22
       145
             36.1
                       30 7
                              US-11-112-277-12
                                                          Sequence 12, Appl
23
       145
             36.1
                    30 7
                              US-11-112-277-19
                                                          Sequence 19, Appl
                      30 7
24
       145
             36.1
                              US-11-112-277-21
                                                          Sequence 21, Appl
                       30 7
25
             36.1
                              US-11-112-277-22
                                                          Sequence 22, Appl
       145
                       31 7
29 7
26
       145
             36.1
                              US-11-112-277-26
                                                          Sequence 26, Appl
27
       143
             35.6
                              US-11-112-277-32
                                                          Sequence 32, Appl
28
             35.6
                       30 6 US-10-997-061-6.
       143
                                                          Sequence 6, Appli
          1
.6
35
3.1
29
23.1
30
7
23.1
30
7
23.1
31
7
23.1
32
7
23.1
33
7
33.1
34
7
1
35
36
36
36
37
29
                       39 7 US-11-174-089-225
        98
                                                          Sequence 225, App
30
        97
                       39 7 US-11-174-089-222
                                                          Sequence 222, App
31
        95
                              US-11-174-089-227
                                                          Sequence 227, App
32
        93
                              US-11-174-089-66
                                                          Sequence 66, Appl
33
        93
                              US-11-174-089-3
                                                          Sequence 3, Appli
34
        93
                              US-11-174-089-4
                                                          Sequence 4, Appli
35
        93
                              US-11-174-089-26
                                                          Sequence 26, Appl
36
        93
                              US-11-174-089-63
                                                          Sequence 63, Appl
37
                              US-11-174-089-61
        93
                                                          Sequence 61, Appl
                              US-11-174-089-59
                                                          Sequence 59, Appl
38
        93
                                                          Sequence 57, Appl
. 39
        93
                              US-11-174-089-57
40
       93
                              US-11-174-089-55
                                                          Sequence 55, Appl
41
       93 23.1
                              US-11-174-089-53
                                                          Sequence 53, Appl
                                                          Sequence 73, Appl
42
       93
                              US-11-174-089-73
                                                          Sequence 51, Appl
43
        93
             23.1
                       37 7
                              US-11-174-089-51
                       37 7
                                                          Sequence 70, Appl
44
        93
             23.1
                              US-11-174-089-70
                       37 7 US-11-174-089-71
                                                          Sequence 71, Appl
45
        93
             23.1
```

```
US-10-997-061-28
; Sequence 28, Application US/10997061
; Publication No. US20050260701A1
; GENERAL INFORMATION:
; APPLICANT: Wagner, Fred W.
  APPLICANT:
              Luan, Peng
  APPLICANT: Xia, Yuannan
;
  APPLICANT: Bossard, Mary
  APPLICANT: Holmquist, Barton
;
  APPLICANT: Merrifield, Edwin H.
;
  APPLICANT: Strydom, Daniel
; APPLICANT:
              Restoragen Inc.
  TITLE OF INVENTION: Method for Enzymatic Production of GLP-1(7-36) Amide
Peptides
; FILE REFERENCE: 1627.003US1
```

RESULT 1

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:23:10; Search time 47 Seconds

(without alignments)

137.206 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0, Gapext 0.5

Searched: 572060 seqs, 82675679 residues

Total number of hits satisfying chosen parameters: 572060

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

1: /cgn2 6/ptodata/1/iaa/5_COMB.pep:*

2: /cgn2 6/ptodata/1/iaa/6 COMB.pep:*

3: /cgn2 6/ptodata/1/iaa/H_COMB.pep:*

4: /cgn2 6/ptodata/1/iaa/PCTUS COMB.pep:*

5: /cgn2 6/ptodata/1/iaa/RE COMB.pep:*

6: /cgn2 6/ptodata/1/iaa/backfiles1.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Result		% Query	_			
No.	Score	Match	Length	DB 	ID	Description
1	324	80.6	87	2	US-09-019-172-2	Sequence 2, Appli
2	198	49.3	64	2	US-10-360-101-228	Sequence 228, App
3	168	41.8	36	2	US-09-614-847-119	Sequence 119, App
4	168	41.8	42	2	US-09-614-847-118	Sequence 118, App
5	167.5	41.7	180	2	US-08-784-582-56	Sequence 56, Appl
6	167.5	41.7	180	2	US-08-784-582-58	Sequence 58, Appl
7	167.5	41.7	180	2	US-08-784-582-61	Sequence 61, Appl
8	167.5	41.7	180	2	US-09-635-679E-2	Sequence 2, Appli
9	167.5	41.7	360	2	US-08-784-582-73	Sequence 73, Appl
10	163	40.5	31	2	US-09-209-799D-16	Sequence 16, Appl
11	163	40.5	31	2	US-09-614-847-123	Sequence 123, App

```
12
        163
               40.5
                          31 2 US-09-997-792A-14
                                                                   Sequence 14, Appl
                          32 2 US-09-614-847-147
13
        163
               40.5
                                                                   Sequence 147, App
                          37 1
14
        163
               40.5
                                  US-08-095-162-19
                                                                   Sequence 19, Appl
15
               40.5
                          37 1 US-08-470-220A-19
        163
                                                                   Sequence 19, Appl
16
        163
               40.5
                          37 2 US-08-967-374-19
                                                                   Sequence 19, Appl
17
        163
               40.5
                          37 2 US-09-302-596-1
                                                                   Sequence 1, Appli
18
        163
               40.5
                          37 2 US-08-472-349-1
                                                                   Sequence 1, Appli
                          37 2 US-09-623-618B-1
19
               40.5
                                                                   Sequence 1, Appli
        163
                          37 2 US-09-333-415-1
37 2 US-09-505-991-19
                                                                   Sequence 1, Appli
20
        163
               40.5
21
        163
               40.5
                                                                   Sequence 19, Appl
22
        163
               40.5
                          37 2 US-09-303-016-1
                                                                   Sequence 1, Appli
23
        163
               40.5
                          37 2 US-09-657-332A-1
                                                                   Sequence 1, Appli
24
        163
               40.5
                          37 2
                                  US-09-614-847-122
                                                                   Sequence 122, App
25
        163
               40.5
                        37 2
                                  US-09-805-507-1
                                                                   Sequence 1, Appli
26
               40.5
                          37 2
                                                                   Sequence 1, Appli
        163
                                  US-09-876-388-1
                          37 2
37 2
27
               40.5
                                                                   Sequence 1, Appli
        163
                                  US-09-859-804-1
28
               40.5
        163
                                  US-10-287-892-1
                                                                   Sequence 1, Appli
29
               40.5
                          37 2 US-09-943-084-1
                                                                   Sequence 1, Appli
        163
                          37 2 US-09-623-548A-343
30
        163
               40.5
                                                                   Sequence 343, App
31
               40.5
                          37 2 US-10-055-259-1
        163
                                                                   Sequence 1, Appli
                          37 2 US-09-657-276-343
32
               40.5
                                                                   Sequence 343, App
        163
                          37 2 US-10-288-340-1
37 2 US-09-982-978-1
31 2 US-09-258-750-14
               40.5
                                                                   Sequence 1, Appli
33
        163
               40.5 37 2 US-09-982-978-1

39.8 31 2 US-09-258-750-14

39.8 31 2 US-09-258-750-15

39.8 31 2 US-09-258-750-16

39.8 31 2 US-09-209-799D-28

39.8 31 2 US-09-398-111-14

39.8 31 2 US-09-398-111-15

39.8 31 2 US-09-398-111-15

39.8 31 2 US-09-398-111-16

39.8 31 2 US-09-997-792A-25

39.8 31 2 US-09-997-792A-25
34
        163
                                                                   Sequence 1, Appli
35
        160
                                                                   Sequence 14, Appl
36
        160
                                                                   Sequence 15, Appl
37
        160
                                                                   Sequence 16, Appl
38
        160
                                                                   Sequence 28, Appl
39
        160
                                                                   Sequence 14, Appl
40
                                                                   Sequence 15, Appl
        160
41
                                                                   Sequence 16, Appl
        160
42
                                                                   Sequence 25, Appl
        160
                        32 2 US-09-258-750-95
                                                                   Sequence 95, Appl
43
               39.8
        160
                          32 2 US-09-398-111-95
44
        160
               39.8
                                                                   Sequence 95, Appl
                          33 2 US-09-258-750-22
45
               39.8
                                                                   Sequence 22, Appl
        160
```

```
RESULT 1
US-09-019-172-2
; Sequence 2, Application US/09019172A
; Patent No. 6723530
; GENERAL INFORMATION:
; APPLICANT: Drucker, Daniel J.
  TITLE OF INVENTION: POLYNUCLEOTIDES ENCODING PROEXENDIN, AND METHODS AND
  TITLE OF INVENTION: USES THEREOF
  FILE REFERENCE: 8607-013
  CURRENT APPLICATION NUMBER: US/09/019,172A
  CURRENT FILING DATE: 1998-02-05
;
; NUMBER OF SEQ ID NOS: 4
; SOFTWARE: PatentIn Ver. 2.0
; SEQ ID NO 2
   LENGTH: 87
   TYPE: PRT
    ORGANISM: LIZARD
US-09-019-172-2
```

OM protein - nucleic search, using frame plus p2n model January 4, 2006, 21:56:58; Search time 3041 Seconds Run on: (without alignments) 1200.063 Million cell updates/sec Title: US-10-716-326-4 Perfect score: 402 1 MKIILWLCVFGLFLATLFPI.....SYLEGQAAKEFIAWLVKGRG 78 Sequence: Scoring table: BLOSUM62 Xgapop 10.0 , Xgapext 0.5 Ygapop 10.0 , Ygapext 0.5 Fgapop 6.0, Fgapext 7.0 6.0 , Delext 7.0 Delop 41078325 seqs, 23393541228 residues Searched: 82156650 Total number of hits satisfying chosen parameters: Minimum DB seg length: 0 Maximum DB seq length: 2000000000 Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries Command line parameters: -MODEL=frame+ p2n.model -DEV=x1h Q=/cgn2_1/USPTO_spool/US10716326/runat_03012006_143904_8655/app_query.fasta_1.26 -DB=EST -QFMT=fastap -SUFFIX=p2n.rst -MINMATCH=0.1 -LOOPCL=0 -LOOPEXT=0 -UNITS=bits -START=1 -END=-1 -MATRIX=blosum62 -TRANS=human40.cdi -LIST=45 -DOCALIGN=200 -THR SCORE=pct -THR MAX=100 -THR MIN=0 -ALIGN=15 -MODE=LOCAL -OUTFMT=pto -NORM=ext -HEAPSIZE=500 -MINLEN=0 -MAXLEN=2000000000 -USER=US10716326 @CGN 1 1 5315 @runat 03012006_143904_8655 -NCPU=6 -ICPU=3 -NO MMAP -LARGEQUERY -NEG SCORES=0 -WAIT -DSPBLOCK=100 -LONGLOG -DEV TIMEOUT=120 -WARN TIMEOUT=30 -THREADS=1 -XGAPOP=10 -XGAPEXT=0.5 -FGAPOP=6 -FGAPEXT=7 -YGAPOP=10 -YGAPEXT=0.5 -DELOP=6 -DELEXT=7 Database : EST:* 1: gb_est1:* 2: gb_est2:* 3: gb est3:* 4: gb htc:* 5: gb est4:* 6: qb est5:* 7: qb est6:* 8: qb est7:*

> 9: gb_gss1:* 10: gb_gss2:*

11: gb_gss3:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			ક			00.111.11.110	
Resu]	۱ +		Query				
No		Score		Length	DB	ID	Description
	1	178	44.3	557	2	BG656218	BG656218 ib38e07.y
	2	174.5	43.4	400	6	CB068992	CB068992 is33f09.y
	3	174.5	43.4	611	6	CA847981	CA847981 iq41a09.y
	4	173.5	43.2	509	3	BM315096	BM315096 ig43d08.y
	5	172.5	42.9	535	5	BU951082	BU951082 io75f03.y
	6	172.5	42.9	757	6	CA775068	CA775068 ip12f09.y
	7	172.5	42.9	928	2	BG116189	BG116189 602318388
	8	171	42.5	592	5	BU079338	BU079338 in22e10.y
	9	170.5	42.4	487	5	BQ787033	BQ787033 il49c01.y
]	LO	170.5	42.4	661	6	CA776177	CA776177 ip01g06.y
	11	169.5	42.2	494	2	BG311458	BG311458 ib25e03.y
	L2	169.5	42.2	550	2	BG656010	BG656010 ib35h06.y
	13	169.5	42.2	604	5	BU078943	BU078943 im68e01.y
	L 4	169.5	42.2	648	6	CA775681	CA775681 io88h06.y
	15	169	42.0	508	2	BG655984	BG655984 ib35e10.y
	16	169	42.0	656		CA941719	CA941719 ir35b11.y
	17	168.5	41.9	425	. 8	DN351146	DN351146 LIB3579-0
	18	168.5	41.9	538	6	CA778313	CA778313 ip16h06.y
	19	168.5	41.9	576	3	BI774144	BI774144 466139 MA
	20	168.5	41.9	586	5	BX669011	BX669011 BX669011
	21	168.5	41.9	596	8	DN358389	DN358389 LIB3626-0
	22	168.5	41.9	603	6	CA778273	CA778273 ip16d02.y
	23	168.5	41.9	622	3	BM311910	BM311910 ig63f12.y
	24	168.5	41.9	627	8	DN357363	DN357363 LIB3626-0
	25	168.5	41.9	630	8	DN357084	DN357084 LIB3626-0
	26	168.5	41.9	651	6	CF788378	CF788378 860325 MA
	27	168.5	41.9	662	1	AW583897	AW583897 ia06d04.y
	28	168.5	41.9	680	8	DN356274	DN356274 LIB3626-0
	29	168.5	41.9	685	7	CK835133	CK835133 4059830 B
	30	168.5	41.9	697	7	CK951493	CK951493 4091010 B
	31	168.5	41.9	705	7	CN789364	CN789364 4123822 B
	32	168.5	41.9	709	7	CN792256	CN792256 4127095 B
	33	168.5	41.9	709	7	CN793557	CN793557 4128597 B
	34	168.5	41.9	713	7	CK832710	CK832710 4056519 B
	35	168.5	41.9	738	6	CA774895	CA774895 ip10b09.y
	36	168.5	41.9	804	7	CK772000	CK772000 960421 MA
	37	168.5	41.9	837	8	DN516026	DN516026 1254447 M
	38	168.5	41.9	1136	4	AY609582	AY609582 Sus scrof
	39	168	41.8	504	3	BM504973	BM504973 ig88g06.y
	40	168	41.8	581	3	BM353974	BM353974 ig58q08.y
	41	168	41.8	582	6	CF249458	CF249458 it73f12.y
	42	168	41.8	611	6	CA773399	CA773399 im63f02.y
	43	168	41.8	618	5	BQ778644	BQ778644 il30g12.y
	44	168	41.8	622	2	BE969691	BE969691 601679632
	45	168	41.8	625	3	BI438227	BI438227 ic19e09.y
					_		==

OM protein - protein search, using sw model

Run on: January 3, 2006, 23:30:21; Search time 163 Seconds

(without alignments)

199.943 Million cell updates/sec

Title: US-10-716-326-4

Perfect score: 402

Sequence: 1 MKIILWLCVFGLFLATLFPI......SYLEGQAAKEFIAWLVKGRG 78

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1867569 seqs, 417829326 residues

Total number of hits satisfying chosen parameters: 1867569

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published Applications AA Main:*

1: /cgn2 6/ptodata/1/pubpaa/US07_PUBCOMB.pep:*

2: /cgn2_6/ptodata/1/pubpaa/US08_PUBCOMB.pep:*

3: /cgn2 6/ptodata/1/pubpaa/US09 PUBCOMB.pep:*

4: /cgn2 6/ptodata/1/pubpaa/US10A PUBCOMB.pep:*

5: /cgn2 6/ptodata/1/pubpaa/US10B PUBCOMB.pep:*

6: /cgn2 6/ptodata/1/pubpaa/US11 PUBCOMB.pep:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

			ક્ર				
Res	sult		Query				
	No.	Score	Match	Length	DB	ID	Description
	1	402	100.0	78	4	US-10-215-272-4	Sequence 4, Appli
	2	402	100.0	78	4	US-10-716-326-4	Sequence 4, Appli
	· 3	402	100.0	78	5	US-10-715-976-4	Sequence 4, Appli
	4	364	90.5	80	4	US-10-215-272-20	Sequence 20, Appl
	5	364	90.5	80	4	US-10-716-326-20	Sequence 20, Appl
	6	364	90.5	80	5	US-10-715-976-20	Sequence 20, Appl
	7	325.5	81.0	77	4	US-10-215-272-6	Sequence 6, Appli
	8	325.5	81.0	77	4	US-10-716-326-6	Sequence 6, Appli
	9	325.5	81.0	77	5	US-10-715-976-6	Sequence 6, Appli
	10	324	80.6	87	5	US-10-775-180-202	Sequence 202, App
	11	324	80.6	87	5	US-10-775-180-203	Sequence 203, App

```
12
       324
              80.6
                       87 5
                              US-10-775-204-635
                                                           Sequence 635, App
13
       324
              80.6
                       87 5
                              US-10-775-204-636
                                                           Sequence 636, App
14
       198
              49.3
                       64
                           4
                              US-10-360-101-228
                                                           Sequence 228, App
15
       195
             48.5
                       84 4
                              US-10-215-272-10
                                                           Sequence 10, Appl
16
       195
             48.5
                       84 4
                              US-10-716-326-10
                                                           Sequence 10, Appl
17
       195
             48.5
                       84
                                                           Sequence 10, Appl
                              US-10-715-976-10
18
             47.8
                       82 4
       192
                              US-10-215-272-8
                                                           Sequence 8, Appli
             47.8
19
       192
                       82
                           4
                              US-10-716-326-8
                                                           Sequence 8, Appli
20
       192
             47.8
                       82
                              US-10-715-976-8
                                                           Sequence 8, Appli
21
     184.5
             45.9
                       77
                           4
                              US-10-215-272-18
                                                           Sequence 18, Appl
             45.9
                       77
22
     184.5
                              US-10-716-326-18
                                                           Sequence 18, Appl
                       77
23
     184.5
             45.9
                              US-10-715-976-18
                                                           Sequence 18, Appl
                       77
24
     176.5
             43.9
                              US-10-775-180-686
                                                           Sequence 686, App
     176.5
             43.9
                       77
                           5
25
                              US-10-775-204-1791
                                                           Sequence 1791, Ap
                      662
                           5
     176.5
             43.9
                              US-10-775-180-611
26
                                                           Sequence 611, App
                           5
27
     176.5
             43.9
                      662
                              US-10-775-204-1623
                                                           Sequence 1623, Ap
                           5
28
       176
             43.8
                      654
                              US-10-775-180-574
                                                           Sequence 574, App
29
             43.8
                      654 5
                                                           Sequence 1559, Ap
       176
                              US-10-775-204-1559
30
     172.5
             42.9
                       89
                          5
                              US-10-775-180-449
                                                           Sequence 449, App
31
     172.5
              42.9
                       89
                              US-10-775-204-1282
                                                           Sequence 1282, Ap
             42.9
                           5
32
     172.5
                      673
                              US-10-775-180-834
                                                           Sequence 834, App
33
     172.5
             42.9
                      673
                           5
                              US-10-775-204-2170
                                                           Sequence 2170, Ap
                      674
                           5
34
     172.5
             42.9
                              US-10-775-180-447
                                                           Sequence 447, App
                           5
35
     172.5
             42.9
                      674
                              US-10-775-204-1280
                                                           Sequence 1280, Ap
36
       172
             42.8
                      663 5
                              US-10-775-180-600
                                                           Sequence 600, App
37
       172
             42.8
                      663 5
                              US-10-775-204-1609
                                                           Sequence 1609, Ap
38
     171.5
              42.7
                       60
                              US-10-775-180-835
                                                           Sequence 835, App
     171.5
              42.7
                          5
                              US-10-775-204-2180
                                                           Sequence 2180, Ap
39
                       60
                           5
40
     171.5
             42.7
                       83
                              US-10-775-180-684
                                                           Sequence 684, App
                           5
41
     171.5
             42.7
                       83
                              US-10-775-204-1789
                                                           Sequence 1789, Ap
                      145
                          5
42
             42.7
                                                           Sequence 685, App
     171.5
                              US-10-775-180-685
                      145
                          5
43
     171.5
              42.7
                              US-10-775-204-1790
                                                           Sequence 1790, Ap
                      664
                                                           Sequence 598, App
44
     171.5
              42.7
                              US-10-775-180-598
                      664
45
     171.5
              42.7
                           5
                              US-10-775-204-1607
                                                           Sequence 1607, Ap
```

```
US-10-215-272-4
; Sequence 4, Application US/10215272
; Publication No. US20040002468A1
; GENERAL INFORMATION:
  APPLICANT: Genzyme Corporation
              Wadsworth, Samuel C.
  APPLICANT:
              Armentano, Donna
  APPLICANT:
              Gregory, Richard J.
  APPLICANT:
  APPLICANT:
              Parsons, Geoffrey
  TITLE OF INVENTION: Methods of Treating Diabetes and Other
  TITLE OF INVENTION: Blood Sugar Disorders
   FILE REFERENCE: 2478.2019002 PCT
   CURRENT APPLICATION NUMBER: US/10/215,272
   CURRENT FILING DATE: 2002-08-07
   PRIOR APPLICATION NUMBER: US 60/310,982
   PRIOR FILING DATE: 2001-08-08
   NUMBER OF SEQ ID NOS: 54
```

RESULT 1

```
; SOFTWARE: FastSEQ for Windows Version 4.0
; SEQ ID NO 4
    LENGTH: 78
    TYPE: PRT
    ORGANISM: Artificial Sequence
    OTHER INFORMATION: Amino acid sequence of Exendin-4.GLP-1Gly8
US-10-215-272-4
  Query Match
                         100.0%; Score 402; DB 4; Length 78;
  Best Local Similarity
                         100.0%; Pred. No. 2.5e-39;
                               0; Mismatches
                                                 0;
  Matches 78; Conservative
                                                    Indels
                                                                Gaps
                                                                          0;
            1 \ \texttt{MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY} \ \ 60
Qу
              1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
           61 LEGQAAKEFIAWLVKGRG 78
Qу
              Db 
           61 LEGOAAKEFIAWLVKGRG 78
RESULT 2
US-10-716-326-4
; Sequence 4, Application US/10716326
; Publication No. US20040143104A1
; GENERAL INFORMATION:
; APPLICANT: Genzyme Corporation
  APPLICANT: Wadsworth, Samuel
  APPLICANT: Armentano, Donna
; APPLICANT: Gregory, Richard J.
.; APPLICANT: Parsons, Geoffrey
   TITLE OF INVENTION: Methods of Treating Diabetes and Other Blood Sugar
Disorders
; FILE REFERENCE: 5062CIP
  CURRENT APPLICATION NUMBER: US/10/716,326
; CURRENT FILING DATE: 2003-11-17
; PRIOR APPLICATION NUMBER: US 10/215,272
; PRIOR FILING DATE: 2002-08-07
; PRIOR APPLICATION NUMBER: US 60/310,982
; PRIOR FILING DATE: 2001-08-08
   NUMBER OF SEQ ID NOS: 54
   SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
    LENGTH: 78
    TYPE: PRT
    ORGANISM: Artificial Sequence
    FEATURE:
    OTHER: INFORMATION: Amino acid sequence of Exendin-4.GLP-1Gly8
US-10-716-326-4
                         100.0%; Score 402; DB 4; Length 78;
  Query Match
                         100.0%; Pred. No. 2.5e-39;
  Best Local Similarity
                             0; Mismatches
  Matches 78; Conservative
                                                0;
                                                     Indels
                                                              0; Gaps
                                                                          0;
            1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qу
```

MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60

```
Db
           1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qу
          61 LEGQAAKEFIAWLVKGRG 78
             1111111111111111
Db
          61 LEGQAAKEFIAWLVKGRG 78
RESULT 3
US-10-715-976-4
; Sequence 4, Application US/10715976
; Publication No. US20050107318A1
; GENERAL INFORMATION:
  APPLICANT: Genzyme Corporation
  APPLICANT: Wadsworth, Samuel
  APPLICANT: Armentano, Donna
              Gregory, Richard J.
  APPLICANT:
  APPLICANT: Parsons, Geoffrey
  TITLE OF INVENTION: Methods of Treating Diabetes and Other Blood Sugar
Disorders
  FILE REFERENCE: 5121
  CURRENT APPLICATION NUMBER: US/10/715,976
  CURRENT FILING DATE: 2003-11-17
; NUMBER OF SEQ ID NOS: 54
  SOFTWARE: PatentIn version 3.2
; SEQ ID NO 4
   LENGTH: 78
   TYPE: PRT
   ORGANISM: Artificial Sequence
    FEATURE:
    OTHER INFORMATION: Amino acid sequence of Exendin-4.GLP-1Gly8
US-10-715-976-4
                        100.0%; Score 402; DB 5; Length 78;
  Query Match
  Best Local Similarity
                        100.0%; Pred. No. 2.5e-39;
  Matches
                              0; Mismatches
                                                   Indels
          78; Conservative
                                                0;
           1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Qу
             1 MKIILWLCVFGLFLATLFPISWQMPVESGLSSEDSASSESFAKRIKRHGEGTFTSDVSSY 60
Db
          61 LEGQAAKEFIAWLVKGRG 78
Qу
             61 LEGQAAKEFIAWLVKGRG 78
Dh
RESULT 4
US-10-215-272-20
; Sequence 20, Application US/10215272
; Publication No. US20040002468A1
; GENERAL INFORMATION:
  APPLICANT: Genzyme Corporation
  APPLICANT: Wadsworth, Samuel C.
.; APPLICANT: Armentano, Donna
; APPLICANT: Gregory, Richard J.
  APPLICANT:
              Parsons, Geoffrey
  TITLE OF INVENTION: Methods of Treating Diabetes and Other
  TITLE OF INVENTION: Blood Sugar Disorders
```